Notice of Allowability	Application No.	Applicant(s)	
	10/762,735	GHAZAL ET AL.	
	Examiner	Art Unit	
	Susan F. Rayyan	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *2/20/2007*.

2. ☒ The allowed claim(s) is/are *1-3, 6-10,13-15,18-22,25-26, now renumbered as claims 1-18*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
   1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Howard Speight, Registration Number 37,733 on April 24, 2007 and April 26, 2007.

The application has been amended as follows:

Claims

In claim 13

Line 1, replaced "tangible" with – computer-readable –

In claim 18

Line 1, replaced "tangible" with – computer-readable –

In claim 25

Line 1, replaced "tangible" with – computer-readable –

Canceled claims 4-5,11-12, 16-17,23-24.

Reasons for Allowance

2. Claims 1-3,6-10,13-15,18-22,25-26 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding independent claim 1, prior art of record does not teach a method for executing database queries, the database comprising a first table having a primary key column and a first correlated value column and a second table having a foreign key column related to the primary key column of the first table and a second correlated value column and specifically preparing a database query for execution based on application of a derived constraint rule (DCR) having the following form:
(PK = FK) → CV2 + C1 <= CV1 <= CV2 + C2 to produce an execution plan and including abort steps conditioned on changes in the DCR in the execution plan and executing the plan.

Regarding independent claim 6 prior art of record does not teach a method for executing database queries, the database comprising a first table having a primary key column and a first correlated value column and a second table having a foreign key column related to the primary key column of the first table and a second correlated value column and specifically preparing a database query for execution based on application of a derived constraint rule (DCR) having the following form:

(PK = FK) → CV2 + C1 <= CV1 <= CV2 + C2 to produce an execution plan and including update steps conditioned on changes in the DCR in the execution plan , the update steps modifying the DCR dependent steps based at least in part on those changes and executing the plan.

Regarding independent claim 10 prior art of record does not teach a method for executing database queries, the database comprising a first table having a primary key column and a first correlated value column and a second table having a foreign key column related to the primary key column of the first table and a second correlated value column, executing a plan and specifically storing a derived constraint rule (DCR) having the following form: (PK = FK) → CV2 + C1 <= CV1 <= CV2 + C2, placing a read lock on the stored DCR, preparing a database query for execution based at least in part on application of the DCR to produce an execution plan.

Regarding independent claim 13 prior art of record does not teach a computer program, stored on a tangible storage medium, executing database queries, the database comprising a first table having a primary key column and a first correlated value column and a second table having a foreign key column related to the primary key column of the first table and a second correlated value column, and execute the plan and specifically preparing a database query for execution based on application of a derived constraint rule (DCR) having the following form: (PK = FK) → CV2 + C1 <= CV1

<= CV2 + C2 to produce an execution plan and including abort steps conditioned on changes in the DCR in the execution plan.

Regarding independent claim 18 prior art of record does not teach a computer program, stored on a tangible storage medium, executing database queries, the database comprising a first table having a primary key column and a first correlated value column and a second table having a foreign key column related to the primary key column of the first table and a second correlated value column, and execute the plan and specifically prepare a database query for execution based on application of a derived constraint rule (DCR) having the following form: (PK = FK) → CV2 + C1 <= CV1 <= CV2 + C2 to produce an execution plan and include update steps conditioned on changes in the DCR in the execution plan , the update steps modifying the DCR dependent steps based at least in part on those changes.

Regarding independent claim 19 prior art of record does not teach a database system for executing database queries, comprising: one or more nodes, a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs, a plurality of virtual processes, each virtual process configured to manage data, including rows organized in tables, a first table having a primary key column and a first correlated value column a second table having a foreign key column related to the primary key column of the first table and a second correlated value column , and specifically prepare

a database query for execution based at least in part on application of a derived constraint rule (DCR) having the following form: (PK = FK) → CV2 + C1 <= CV1 <= CV2 + C2 to produce an execution plan, update steps conditioned on changes in the DCR in the execution plan, the update steps modifying the DCR dependent steps based at least in part on those changes.

Regarding independent claim 20 prior art of record does not teach a database system for executing database queries, comprising: one or more nodes, a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs, a plurality of virtual processes, each virtual process configured to manage data, including rows organized in tables, stored in one of a plurality of data-storage facilities, a first table having a primary key column and a first correlated value column a second table having a foreign key column related to the primary key column of the first table and a second correlated value column , and specifically prepare a database query for execution based at least in part on application of a derived constraint rule (DCR) having the following form: (PK = FK) → CV2 + C1 <= CV1 <= CV2 + C2 to produce an execution plan and include abort steps conditioned on changes in the DCR in the execution plan.

Regarding independent claim 25 prior art of record does not teach a computer program, stored on a tangible storage medium, for executing database queries, the database comprising a first table having a primary key column and a first correlated value column and a second table having a foreign key column related to the primary key column of the first table and a second correlated value column and execute the plan and specifically store a derived constraint rule (DCR) having the following form: (PK = FK) → CV2 + C1 <= CV1 <= CV2 + C2, place a read lock on the stored DCR, prepare a database query for execution based at least in part on application of the DCR to produce an execution plan.

Regarding independent claim 26 prior art of record does not teach a database system for executing database queries, comprising: one or more nodes; a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs, a plurality of virtual processes, virtual process configured to manage data, including rows organized in tables, stored in one of a plurality of data-storage facilities, a first table having a primary key column and a first correlated value column, a second table) having a foreign key column related to the primary key column of the first table and a second correlated value column , and specifically store a derived constraint rule (DCR) having the following form: (PK = FK) → CV2 + C1 <= CV1 <= CV2 + C2 , place a read lock on the stored DCR and prepare a database query for execution based at least in part on application of the DCR to produce an execution plan.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan F. Rayyan whose telephone number is 571-272-1675. The examiner can normally be reached on M-F, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SR
4/26/2007

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